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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/753,332

01/09/2004

Kia Silverbrook

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11/27/2006

SILVERBROOK RESEARCH PTY LTD
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AUSTRALIA

EXAMINER

EWALD, MARIA VERONICA

ART UNIT

PAPER NUMBER

1722

DATE MAILED: 11/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/753,332

Applicant(s)

SILVERBROOK, KIA

Examiner

Maria Veronica D. Ewald

Art Unit

1722

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-12 and 18 is/are rejected.
- 7) ☒ Claim(s) 5 and 13-17 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Terminal Disclaimer

13. The terminal disclaimer filed on September 14, 2006 disclaiming the terminal portion of any patent granted on this application, which would extend beyond the expiration date of U.S. Patent No. 6,997,698 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

14. Claims 5, 7 and 10 – 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The cited prior art references teach a printing system; however, do not teach a printing system for the creation of a three-dimensional object, printing objects layer-by-layer, the system printing at least part of each of multiple layers simultaneously.

Claim Rejections - 35 USC § 112

15. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 2 – 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which

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applicant regards as the invention. Claims 2 – 4 recite the limitation "the first and second methods;" however, in light of the amendment of claim 1, such a limitation lacks antecedent basis and thus, requires correction.

Claims 7 – 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Each of these claims, respectively, recite the limitation "each layer or layer" which lacks antecedent basis, since each of these claims depends on claim 1, of which, no mention is made of any layer.

Claim Rejections - 35 USC § 102

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 2, 6, 9 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Borgardt (U.S. 5,730,058). Borgardt teaches a printing system including a plurality of sequentially positioned printheads (items 6, 8 and 10 – figure 1) and curing mechanisms (items 12, 24 and 26 – figure 1), each of the printheads printing a respective material and each of the curing mechanisms performing a different curing method on associated ones of the printed materials, wherein the printheads printing materials being cured by the same curing method are grouped with the associated curing mechanism (column 3, lines 30 – 45); wherein the first and second methods

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include at least one method selected from a group including: evaporative drying; freezing of material ejected when molten; ultra-violet curing; addition of a curing agent (column 3, lines 35 – 45; column 4, lines 25 – 45).

With respect to claims 6, 9 and 18, the reference further teaches that the system includes a plurality of printheads (Figure 1; column 3, lines 30 – 35); wherein the printheads are configured such that at least one of the layers may be printed with a first set of materials and at least one other of the layers may be printed with a second set of materials and wherein the first and second sets are not the same (column 3, lines 33 – 35); wherein there at least two printheads, wherein a first printhead is actively maintained at a first temperature and a second printhead is actively maintained at a second temperature (column 3, lines 33 – 35; column 4, lines 33 – 35).

Claims 1 – 2, 6, 8 – 9 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Reed, et al. (U.S. 6,026,748). Reed, et al. teach a printing system including a plurality of sequentially positioned printheads (item 30 – figure 1) and curing mechanisms (item 100 – figure 1; column 3, lines 20 – 25), each of the printheads printing a respective material and each of the curing mechanisms performing a different curing method on associated ones of the printed materials, wherein the printheads printing materials being cured by the same curing method are grouped with the associated curing mechanism (column 2, lines 45 – 50; column 3, lines 1 – 15, 55 – 65); wherein the first and second methods include at least one method selected from a

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group including: evaporative drying; freezing of material ejected when molten; ultra-violet curing; addition of a curing agent (column 3, lines 20 – 24).

With respect to claims 6, 8 – 9 and 18, the reference further teaches that the system includes a plurality of printheads (figure 1); wherein the printheads are configured to enable printing of at least two different materials in at least one layer (column 3, lines 7 – 10); wherein the printheads are configured such that at least one of the layers may be printed with a first set of materials and at least one other of the layers may be printed with a second set of materials and wherein the first and second sets are not the same (column 2, lines 42 – 45; column 3, lines 7 – 10, 55 – 65); wherein there are at least two printheads, wherein a first printhead is actively maintained at a first temperature and a second printhead is actively maintained at a second temperature (item 30 – figure 1; column 2, lines 40 – 45).

Claims 1 – 4, 6, 9 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Stadler, et al. (U.S. 6,443,058). Stadler, et al. teach a printing system including a plurality of sequentially positioned printheads (items 3 – 5 and 9 – 13 – figure 1) and curing mechanisms (items 6 – 7 and 33 – figure 1; item 38 – figure 2; column 4, lines 63 – 65; column 6, lines 30 – 35; column 10, lines 5 – 11); each of the printheads printing a respective material and each of the curing mechanisms performing a different curing method on associated ones of the printed materials, wherein the printheads printing materials being cured by the same curing method are grouped with the associated curing mechanism (figures 1 and 2; column 4, lines 63 – 65; column 6,

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lines 30 – 35; column 10, lines 5 - 11); wherein the first and second methods include at least one method selected from a group including: evaporative drying; freezing of material ejected when molten; ultra-violet curing; addition of a curing agent (column 4, lines 63 – 65); wherein the first and second methods includes printing of a curing agent simultaneously or sequentially with the respective material (column 9, lines 30 – 55); wherein the first and second methods includes printing of a curing agent selected from a group including: a catalyst; a polymerization initiator; a compound that reacts with the respective material (column 9, lines 30 – 55).

With respect to claims 6, 9 and 18, the reference further teaches that the system includes a plurality of printheads (figures 1 and 2); wherein the printheads are configured such that at least one of the layers may be printed with a first set of materials and at least one other of the layers may be printed with a second set of materials, and wherein the first and second sets are not the same (column 6, lines 59 – 68; column 7, lines 1 – 10; column 8, lines 39 – 48); wherein the system includes at least two printheads (figures 1 and 2), wherein a first printhead is actively maintained at a first temperature and a second printhead is actively maintained at a second temperature (column 7, lines 1 – 10; column 8, lines 40 – 48).

Response to Arguments

17. Applicant's arguments, see pages 8 – 9, filed September 14, 2006, with respect to the rejection(s) of claim(s) 1 – 12 under 102(b) and 102(e) have been fully considered and are persuasive. Examiner agrees that neither the reference of Cima, et al. or

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Gothait teach sequentially positioned printheads and curing mechanisms. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Borgardt, Reed, et al., and Stadler, et al.

Borgardt, Reed, et al., and Stadler, et al. teach printing systems which include sequentially positioned printheads, followed by curing mechanisms which alternate between printing a first ink layer, curing, printing a second ink layer, etc. In addition, the curing mechanisms include different curing methods, i.e., evaporative drying or ultraviolet radiation, depending on the properties of the ink being applied.

However, Examiner has also recognized and objected to allowable claims as listed in the previous section under allowable subject matter.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVE


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